



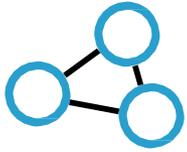
World's first search engine for the public Internet of Things
thingful.net

Unlocking IoT data value

Smart Systems Summit, London 2nd October 2014

www.hvm-uk.com

Data and its value



Growth in the emerging global IoT marketplace is accelerating. Core to every IoT business model is **data**, now seen as an **'asset class'**.

World Economic Forum report 2011, Personal Data: The Emergence of a New Asset Class



To make IoT data **meaningful** & **valuable**, you need to know:

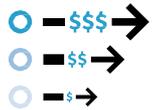
- **where** it is
- **who** created it
- **how good** it is
- how it **compares**
- how to **act upon it**
- how to **monetise it**



As the global IoT marketplace evolves, **Thingful** will tackle those issues & solve those problems, as **the most trusted global service** for

- **finding** connected devices
- **assessing** IoT data **provenance** & **quality**
- **making decisions about** & **acting upon** the world

We understand the implications



The monetisation model for IoT is different from the monetisation model of the web

because the nature of IoT data, and how it's consumed, is fundamentally different.



IoT manufacturers/infrastructures have weak recurring revenue business models

and will need to be part of a **data consent and release** chain – in the long run may be totally dis-intermediated like ISPs were from content based transactions.



Fragmentation around verticals will persist due to regulatory constraints & privacy concerns

Discoverability of cross-domain data quality & provenance assessment will be fundamental for both **businesses**, powered by **secure IoT data** from 3rd parties, and **consumers**, managing & acting upon IoT data with full control & **informed consent**.

Thingful's mission and proposition



Become the **dominant search engine & transaction enablement service** for the global IoT data services market **within 5 years** by maintaining the lead in **indexing connected objects** and acquiring a **share of IoT** search and **data entitlement** transactions.



Thingful's **IoT transaction management platform** will enable

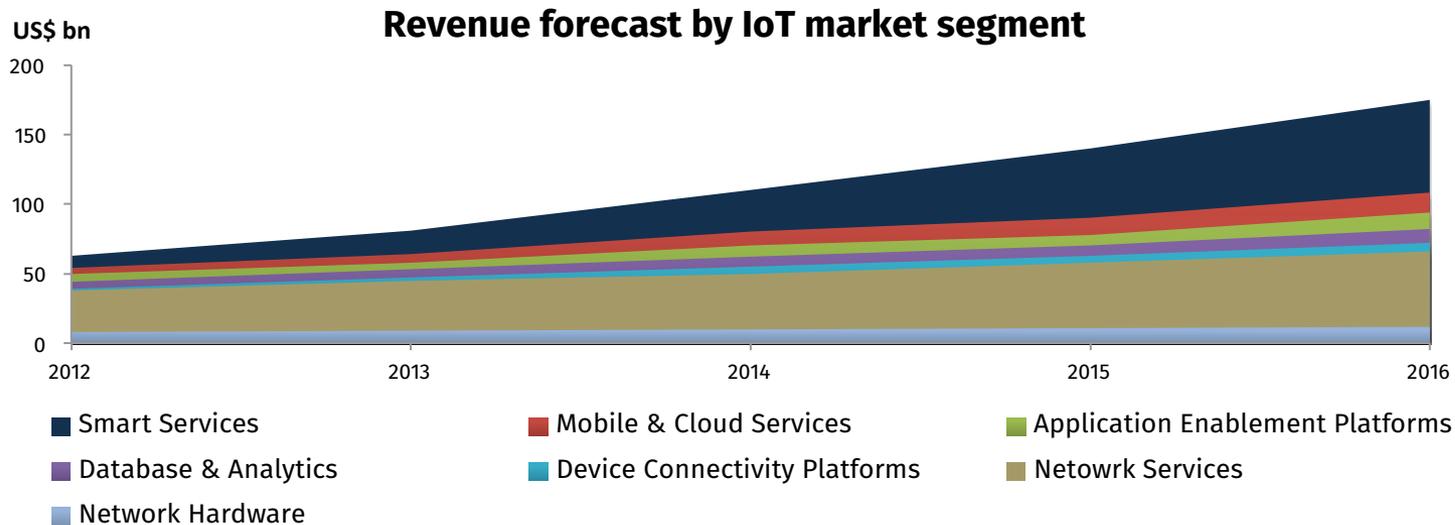
- **Discovery** of private and public connected devices and data
- **Assessment** of IoT data **provenance & quality**
- IoT data entitlement management **making decisions about & acting upon** the world

For **enterprise** users, enable **trusted party** IoT data exchange transactions via an **entitlement** capability

For **individual** users, become the **most visible IoT device and data service** for IoT device and data discovery, provenance, information and sharing

Value creation in IoT

- **Value** and **profitability** are not likely to be aligned
 - Hard technologies will be declining value opportunities though growth can be enormous
- **Sustainable profits** will be in **services** that flow from **handling of data**
 - In the short term connectivity players will continue to be profitable till market maturity leading to weak profitability profile but a steady revenue base – ingredients for industry consolidation



Source: Harbor Research, Markets: where value will be created in the Internet of Things & People (2014)

Expected market place dynamics



Market defining platforms

Systems are **not** going to work as **disparate collection** of hardware, software and networking products

Business practices and standards for **interoperability, security,** performance and **privacy** will be required

Early advantage for technology and business integration platforms that can sold to **more than one vertical**



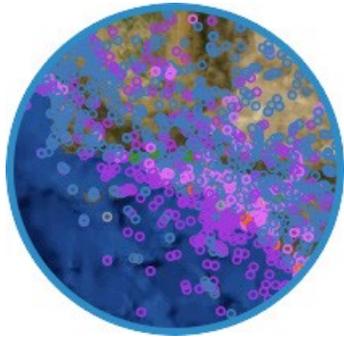
User experience will drive value

Data combined with its context of use will help define value proposition

User experience will be key in acquiring market share from competition

Introducing Thingful

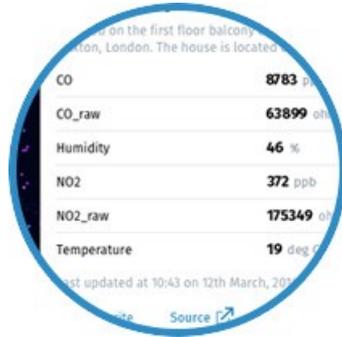
Today a search engine for the Internet of Things



Connected object index

IoT networks/infrastructures

- corporate, institutional & governmental public data
- Data source links, data preview & ownership details.



Cross-network discovery

Integrates across IoT data silos

- Cf. mid-90's Yahoo, managed directory of categorised links
- Makes it easier to find things across all networks.



Geographical search

Find connected physical objects

- Search by geolocation & category
- Patent-pending ranking methodology, ThingRank™



Provenance & discussion

People claim & verify ownership

- Attach Twitter profiles, prove physical/data access
- Discussion/promotion of data, devices & deployments

Introducing Thingful

In 2016 a complete on-demand IoT data service



Industry-defining **IoT search engine** and **data entitlement framework** providing



Data discoverability
device + context



Provenance
Origin verification



Interoperability
incl quality assessment



Secure mediation
data entitlement

E.g. Thingful = Experian + Verisign + mid-90s Yahoo

One example of multiple connected use cases



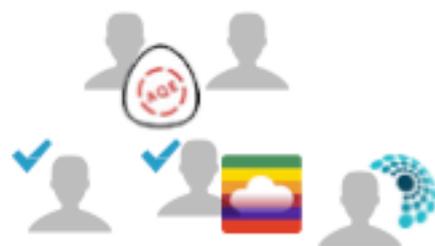
Jane worries about her son's asthma & uses **Thingful** to understand air quality (AQ) in her neighbourhood. She finds several local devices incl. John's public outdoor monitor, which **Thingful** verified.



Jane contacts John via **Thingful** & he tells her about his *indoor* AQ monitor which he hasn't made public yet. **Thingful** tells her it's the most popular model in the city & so she buys one.



John uses **Thingful's** entitlement framework to share his daily aggregate data with Jane, so they can compare & share strategies for improving AQ. **Thingful** knows weather & AQ are related & shows them local devices.



Improving AQ requires wider collaboration, so John & Jane form a local AQ group on **Thingful** to find others with devices on different networks. **Thingful** verifies devices & assesses data quality for both public & private devices, using its ontological framework to cross-compare.



Acompany Inc produces AQ devices, sells analytics to cities & uses **Thingful** to locate AQ troublespots around the world to market their devices & services. **Thingful** helps them find the AQ group & mediates the purchase of AQ data at quality & resolution each is comfortable with.



The city purchases Acompany's analytics & uses **Thingful** to find & assess their progress in dealing with AQ against other cities' health targets. Through **Thingful**, they identify John & Jane's group as an important one to support & amplify.



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